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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/791,902	03/04/2004	Kazuyuki Iwamoto	03500.017942.	4469

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FITZPATRICK CELLA HARPER & SCINTO
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NEW YORK, NY 10112

EXAMINER

PHAM, HAI CHI

ART UNIT	PAPER NUMBER
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2861

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/03/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/791,902

Applicant(s)

IWAMOTO, KAZUYUKI

Examiner

Hai C. Pham

Art Unit

2861

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 March 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 34-41 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 34-41 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Request For Continued Examination

1. The request filed on 03/05/07 for a Continued Examination (RCE) under 37 CFR 1.114 based on parent Application No. 10/791,902 is acceptable and a RCE has been established. An action on the RCE follows.

Claim Objections

2. Claim 37 is objected to because of the following informalities:
 - Line 3, "lense" should read --lens--.Appropriate correction is required.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 34 and 40-41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's Acknowledged Prior Art (referred as AAPA hereafter) in view of Tsuchida (US 6,567,201).

AAPA discloses in Figs. 9-14 an image forming apparatus comprising a first image bearing member (first one of the four photosensitive drums 120), a second image

Art Unit: 2861

bearing member (second one of the four photosensitive drums 120), a laser unit for forming electrostatic latent images on said first and second image bearing members, respectively, wherein said laser unit comprises a first laser element (light source 151) which is arranged to irradiate said first image bearing member and a second laser unit (light source 152) which is arranged to irradiate said second image bearing member, a rotary polygonal mirror (polygon mirror 133) positioned for common scanning of laser beams emitted from said laser unit, and toner image forming means (developing unit 122) for forming toner images on a recording material by toner development of the electrostatic latent images formed on said first and second image bearing members, wherein said laser unit further comprises a first lens barrel portion (first lens barrel portion 153) which holds said first laser element, and a second lens barrel portion (second lens barrel portion 154) which holds said second laser element.

However, AAPA fails to teach the part of a side wall of said first lens barrel portion being shared with a part of a side wall of said second lens barrel portion:

Tsuchida teaches an optical scanner having a laser unit (subunit S1) comprising a first laser element (first laser light source 11) and a second laser unit (second laser light source 11), wherein said laser unit further comprises a first lens barrel portion which holds said first laser element (first lens barrel 13 holding the first laser light source 11 and the first collimator lens 12), and a second lens barrel portion which holds said second laser element (second lens barrel 13 holding the second laser light source 11 and the second collimator lens 12), and wherein the first and the second laser holders share a common side wall (Fig. 2B).

Art Unit: 2861

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify the AAPA device by joining the two lens barrels together as taught by Tsuchida. The motivation for doing so would have been to securely and integrally hold the collimator lenses.

With regard to claims 40 and 41, AAPA further teaches the laser beams emitted from the first and second laser elements having an inclination relationship with each other so as to come close to each other (Fig. 13), and an optical case housing said laser unit and said rotary polygon mirror (Figs. 9-11).

5. Claims 35-38 are rejected under 35 U.S.C. 103(a) as being unpatentable over AAPA in view of Tsuchida, as applied to claim 34 above, and further in view of Kobayashi (JP 2003-195207).

AAPA in view of Tsuchida discloses all the basic limitations of the claimed invention except for the laser unit comprising a first lens supporting portion which supports a first lens provided on a side of a tip of the first lens barrel portion, and a second lens supporting portion which supports a second lens provided on a side of a tip of the second lens barrel portion (claim 35), said first and second lenses being bonded to said first and second lens supporting portions, respectively (claim 36), said first and second lens supporting portions having projections that are projected from the tips of said first and second lens barrel portions, respectively, in order to support parts of circumferential surfaces of said first and second lenses, respectively (claim 37), and the projections support parts of the circumferential surfaces of the first and second lenses,

Art Unit: 2861

respectively, off a position in which the circumferential surfaces of said first and second lenses are close to each other (claim 38).

Kobayashi et al. discloses in Figs. 1 and 2 a laser light source device comprising a laser holder (2) for holding a semiconductor laser (1) and a collimator lens (3), a lens supporting portion (protrusions 23) provided at the tip of the cylindrical portion of the holder member (2) to support the collimator lens (English translation, paragraph [0033]). Kobayashi et al. further teaches the lens supporting portion being formed by a plurality of projections (23) defined by the notches (24) at the tip of the cylindrical portion of the holder member (2) to partially support the circumferential surface of the collimator lens as well as the adhesive (25) for adhesively fixing the collimator lens (3) to the lens supporting portion (Figs. 2-3).

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify the device of AAPA by providing the plurality of projections at the tip of the laser supporting member to support the collimator lens as taught by Kobayashi et al. The motivation for doing so would have been to reliably support the collimator lens and the laser element.

6. Alternatively, claims 35-38 are rejected under 35 U.S.C. 103(a) as being unpatentable over AAPA in view of Tsuchida, as applied to claim 34 above, and further in view of Sato et al. (US 6,928,100).

AAPA in view of Tsuchida discloses all the basic limitations of the claimed invention except for the laser unit comprising a first lens supporting portion which

Art Unit: 2861

supports a first lens provided on a side of a tip of the first lens barrel portion, and a second lens supporting portion which supports a second lens provided on a side of a tip of the second lens barrel portion (claim 35), said first and second lenses being bonded to said first and second lens supporting portions, respectively (claim 36), said first and second lens supporting portions having projections that are projected from the tips of said first and second lens barrel portions, respectively, in order to support parts of circumferential surfaces of said first and second lenses, respectively (claim 37), and the projections support parts of the circumferential surfaces of the first and second lenses, respectively, off a position in which the circumferential surfaces of said first and second lenses are close to each other (claim 38).

Sato et al. discloses a laser emitter comprising a laser holder (10) having a cylindrical portion (11) for holding a semiconductor laser S and a lens-supporting portion (lens accommodating portion or protrusions 70, Fig. 15A-B) provided at the tip of the cylindrical portion to support the collimator lens C. Sato et al. further teaches the lens accommodating portion (13 or 70) being formed by a plurality of projections (70) defined by the notches (72) at the tip of the cylindrical portion (11) to partially support the circumferential surface of the collimator lens C (Figs. 15A-B) (col. 7, lines 43-65) as well as the UV-curing type adhesive W for adhesively fixing the collimator lens C to the lens accommodating portion (Fig. 7).

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify the device of AAPA by providing the plurality of projections at the tip of the laser supporting member to support the collimator lens and

Art Unit: 2861

the laser element to be press-fitted into the holder as taught by Sato et al. The motivation for doing so would have been to reliably support the collimator lens and the laser element as suggested by Sato et al. at col. 6, lines 14-26.

7. Claim 39 is rejected under 35 U.S.C. 103(a) as being unpatentable over AAPA in view of Tsuchida, as applied to claim 34 above, and further in view of Nakajima et al. (US 6,621,512).

AAPA in view of Tsuchida discloses all the basic limitations of the claimed invention except for the first and second laser elements being fixed to the common electric substrate.

Nakajima et al. discloses in Fig. 26 a multi-beam scanning apparatus comprising a first lens barrel portion (first laser diode mounting portion of the supporting member 339) for holding a first laser element (laser diode 321a), a second lens barrel portion (second laser diode mounting portion of the supporting member 339), of which an optical axis is slanted with respect to an optical axis of the first lens barrel portion (the optical axes of the laser diodes 321a and 321b as defined by the respective mounting portions are at an intersecting angle Φ), for holding a second laser element (laser diode 321b), the first and second laser diode mounting portions forming an integral part of the supporting member (339), a first coupling or collimator lens (323a) being attached to one surface of the projection extending from the forward face of the laser diode supporting member (339), and a second coupling or collimator lens (323b) being attached to the other surface of the projection extending from the forward face of the

Art Unit: 2861

laser diode supporting member (339). Nakajima et al. further teaches a second pair laser-lens assembly being provided, wherein the four laser elements are fixed to the same electric substrate (circuit board 400) (Fig. 29A).

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to provide the device of AAPA with the drive circuit board to commonly support the first and second laser elements as taught by Nakajima et al. The motivation for doing so would have been to form a compact print head for recording color image.

Response to Arguments

8. Applicant's arguments with respect to claims 34-41 have been considered but are moot in view of the new grounds of rejection.

Contact information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hai C. Pham whose telephone number is (571) 272-2260. The examiner can normally be reached on M-F 8:30AM - 5:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Luu can be reached on (571) 272-7663. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2861

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



HAI PHAM
PRIMARY EXAMINER
March 31, 2007